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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614

EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/090,083

Applicant(s)

FARASSAT, FARHAD

Examiner

Lynne Edmondson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-16, 18-21, 23 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-16, 18-21, 23 and 27-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 120204                      6) ☐ Other:

## DETAILED ACTION

### *Response to Amendment*

1. It is noted that page 10 of the remarks is missing. A response will be sent based on the available remarks.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6, 8-10, 12-14, 16, 18-21, 27, 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Vanderclip (USPN 5892155).

Vanderclip teaches a method of testing wire bond connections between a bonded wire and a pad on an electronic device formed in the conventional manner wherein the method comprises lifting the bonding head after bond formation, gripping the wire with a clamp and raising the wire through a second distance during which process the force on the wire is detected (figure 4, col 1 lines 45-62, col 6 lines 47-62 and col 7 lines 23-44). Distances and forces are calculated over time by a computer

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program (col 6 line 63 – col 7 line 12). It is noted that the substrate does not further limit the apparatus.

4. Claims 1, 2, 11-16 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Sykes (USPN 6301971 B1).

Sykes teaches a method of testing wire bond connections between a bonded wire and a pad on an electronic device formed in the conventional manner wherein the method comprises lifting the bonding head after bond formation, gripping the wire with a clamp and raising the wire through a second distance during which process the force on the wire is detected (col 1 lines 21-27 and col 3 line 60 – col 4 line 34). It is noted that the substrate does not further limit the apparatus.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderclip (USPN 5892155) in view of Kelly et al. (USPN 5894981).

Vanderclip teaches a method of testing wire bond connections between a bonded wire and a pad on an electronic device formed in the conventional manner

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wherein the method comprises lifting the bonding head after bond formation, gripping the wire with a clamp and raising the wire through a second distance during which process the force on the wire is detected (figure 4, col 1 lines 45-62, col 6 lines 47-62 and col 7 lines 23-44). Distances and forces are calculated over time by a computer program (col 6 line 63 – col 7 line 12). It is noted that the substrate does not further limit the apparatus. However there is no disclosure of a strain gage or transducer holder.

Kelly teaches a method of testing wire bond connections between a bonded wire and a pad on an electronic device (col 1 lines 5-12) formed in the conventional manner of heat or ultrasound (col 3 lines 16-26). Distances and forces are calculated over time by a computer program (col 6 lines 22-46). The testing arrangement is integrated into the bonding head (figure 3 and col 4 lines 21-28). The bonding head comprises a tool holder, transducer holder, wire clamp holder, drive mechanism for vertical displacement of the bonding head and tool holder (col 4 lines 40-59) and a program control system for controlling movement and taking measurements (col 6 lines 22-46 and col 9 lines 47-64). The wire clamp holder is mounted to the bonding head such that it can be easily deflected against a pre-tensioning element (flexible cantilever or spring ) and has a strain gage for force measurement (col 1 lines 22-30 and col 7 lines 18-33).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a transducer holder as is conventional in the art to control transducer movement and to employ a strain gage to measure force is a simple and cost-effective manner (Vanderclip, col 2 lines 1-7).

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7. Claims 2-4, 6-8, 21, 23 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sykes (USPN 6301971 B1) in view of Kelly et al. (USPN 5894981).

Sykes teaches a method of testing wire bond connections between a bonded wire and a pad on an electronic device formed in the conventional manner wherein the method comprises lifting the bonding head after bond formation, gripping the wire with a clamp and raising the wire through a second distance during which process the force on the wire is detected (col 1 lines 21-27 and col 3 line 60 – col 4 line 34). It is noted that the substrate does not further limit the apparatus. However the bonding apparatus is not further disclosed. Neither is a computer taught.

Kelly teaches a method of testing wire bond connections between a bonded wire and a pad on an electronic device (col 1 lines 5-12) formed in the conventional manner of heat or ultrasound (col 3 lines 16-26). Distances and forces are calculated over time by a computer program (col 6 lines 22-46). The testing arrangement is integrated into the bonding head (figure 3 and col 4 lines 21-28). The bonding head comprises a tool holder, transducer holder, wire clamp holder, drive mechanism for vertical displacement of the bonding head and tool holder (col 4 lines 40-59) and a program control system for controlling movement and taking measurements (col 6 lines 22-46 and col 9 lines 47-64). The wire clamp holder is mounted to the bonding head such that it can be easily deflected against a pre-tensioning element (flexible cantilever or spring ) and has a strain gage for force measurement (col 1 lines 22-30 and col 7 lines 18-33).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a conventional bonding apparatus in combination with a computer

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to precisely measure small forces in a quick and reliable manner and thereby form consistently strong bonds (Sykes, col 1 lines 7-47).

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-4, 6-16, 18-21, 23 and 27-30 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

LRE

LYNNE R. EDMONDSON  
PRIMARY EXAMINER

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6/14/05